

Newsletter for Birdwatchers

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ANATIDAE 2000

A legacy to protect the
World's
ducks, geese and swans



Report by S. Sridhar, Regional Co-ordinator, AWC

It was an exceptionally cold winter evening when we landed at Strasbourg, France, on Sunday the 4th December 1994 to attend the Anatidae 2000 Conference.

Anatidae 2000, the First International Conference on Ecology conservation and habitat management of ducks, geese and swans, brought together 350 experts from 58 countries, representing all continents except Antarctica.

Strasbourg is the Alsatian capital in France, which is well known for holding National and International Conferences, maintaining its traditional position as a universal focal point. It is a focal point to the Anatids as well, for one could watch ducks and swans, quietly swimming in relative safety in the ice cold waters of the river Ill and its canals encircling the city. The presence of swans and ducks in the proximity of the venue, enhanced the joyousness of the event. Two species of goose are also said to winter in this port city of France.

Therefore, Strasbourg had the incidental advantage of hosting the Anatidae conference, in the land preferred by the Anatids.

The Five day conference (5 - 9 December 1994) dealt at length the status, trends, habitat preferences and management options for all the 159 species of Anatidae.

The programme included four plenary sessions, 32 invited/key speakers, 9 formal and 15 informal workshops, and 60 poster presentations with extensive discussions.

At the global level, Anatidae are one of the better studied groups, but interesting new information and urgent conservation priorities emerged during the conference.

The deliberations revealed that most of the globally threatened Anatidae are the non-migratory ducks, that live in developing countries. Since very little is known about them at present, effective conservation steps can be taken only after basic ecological research.

One of the main objectives of the conference was to obtain information for finalising a Global Action Plan for Anatidae. This is likely to be published jointly by the IWRB and the IUCN Species Survival Commission.

A draft document of the conference was prepared. Several conclusions and recommendations were made. Some of them are listed here :

POPULATIONS, TRENDS AND CONSERVATION STATUS

Conclusions

- Globally, there are 159 species of Anatidae, from which 410 biogeographic populations have been identified. These populations provide the logical units for coordination of conservation action.
- Much survey and research work has been undertaken for the Anatidae, and these populations are relatively well known compared with many other bird taxa. However, population estimates exist for only 58% of these populations. The most important gaps are for ecological groups such as seaducks and for species which inhabit areas which are not easily accessible, or areas with few ornithologists (eg. the high arctic, many tropical regions and arid zones).
- Monitoring is an essential tool to identify priorities for Anatidae conservation and hunting management. In many regions a lot of information is still lacking for a number of populations. There are still serious gaps in baseline monitoring programmes, especially in developing regions (eg. Africa). Even when qualified staff are available, the costs of transport are often prohibitive. However, even to provide essential training courses and materials, funds are often lacking.
- Fifty Anatidae taxa, including 31 species (ie. one-fifth of all Anatidae) meet the new IUCN criteria of globally threatened: 10 are categorized as Critically Endangered, 11 as Endangered and 29 as Vulnerable. Six (12%) of these are predicted to go extinct in the next ten years; a further seven taxa have gone extinct over the last 100 years. Forty (80%) of the globally threatened, plus all of the extinct taxa, are ducks.

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Anatidae 2000 Conference was held in the grand Semi-Circular Chamber of Council de Europe.



The presence of swans and ducks, in the proximity of the venue, enhanced the joyousness of the event.



Photo : S. Sridhar

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Editorial

Ornithological Society of India

I keep receiving letters about the objectives and the future of the OSI. I take the easy way out and say that all enquiries must be directed to Dr Asha Saklani, the Secretary General. I know that this is not a satisfactory way for the President to deal with the problem. I have just received Asha's letter which says: "I do not understand why you continue to be obsessed with the purpose and future of OSI. As I told you earlier, there has been a tremendous response and OSI at the moment is about 200 members strong, (30 life members) and a great majority represent the naturalists, conservationists and birdwatchers. I receive so many letters praising our efforts in bringing OSI into existence. Regarding the Delhi Meeting in November it is very nice of you to suggest a postponement should we not get a reasonable response. For your kind information, we have received more than 100 confirmations so far. The second circular shall be sent out shortly. Many members, including some RRs (the original ones!) have offered to organize sessions and round table on varied aspects of ornithology, for example, conservation of endangered species, N.E. Himalayan habitats, Water birds, Biological rhythms, reproduction and Agricultural Ornithology. Exhibition of bird photographs and egg shell paintings have also been offered."

I had suggested two topics for this Conference — one was to produce a paper on opportunities for ornithologists and conservationists in India. During the past few years these opportunities have grown manifold. Because of the pollution laws industrial houses employ Pollution Control Officers. Companies are also now required to submit an Environmental Audit together with the Financial Audit with their annual accounts. Obviously there should be considerable opportunities for environmentalists to be employed in Companies to look after this part of the work. Could the OSI organise a Workshop where all the present environment laws are discussed and a training programme instituted for prospective candidates for conservation positions in industry? Some of our universities might be interested in helping with such an exercise.

The second suggestion which I had made to Asha was about preparing land use plans for various regions in the country, keeping the birds in mind. If the interests of birds are kept in mind by the planners, the ecology of the region will not be disrupted — that is the hope.

Mrs Usha Ganguli

Mrs Usha Ganguli who died many years ago in Delhi, was a most competent birdwatcher. Salim Ali was often astounded by her capacity to identify rare species. Abdul Jamil Urfi is compiling information on Mrs Ganguli. Her book on the Birds of Delhi is a valuable reference volume, but very little is known about the author herself. Readers who have any information about Usha Ganguli may kindly correspond with Abdul Jamil Urfi. I am sure that Peter Jackson will be able to supply interesting information about her.

Lavkumar Khachar

When the Newsletter was first started in December 1959, Lavkumar Khachar gave it a good start by his interesting-cum-accurate notes on birds. In spite of his commitments with the Centre for Environmental Education, and others, he remains a valuable supporter of the Newsletter. Unfortunately, he seems to be in the dumps these days because of the damage to the environment which is proceeding apace. I quote from a recent circular letter dated 1st May 1995 :-

"My depression is all the more poignant, the hurt more palpable when I realise that in spite of the thousands of you young people whom I had the privilege of exposing to such sunrises, I seem to be starkly alone. Where have we failed? For the last several years I have been thinking on what needs to be done and I think I

have the answer — let us periodically get together. Bakor, Beyt Dwarka and many more locations like them must be fully utilised to renew our contacts not only with each other but with the life-giving and sustaining elements. Let us create opportunities for more and more young people to swim the sea, climb the Himalaya and to watch such sunrises. ...

"... Each month this highly personalised letter will be mailed from Sundarvan, Ahmedabad, inviting you to participate in the exchange of thoughts, concepts; a sort of ongoing seminar, aimed at generating awareness of a concern for what we indeed are: unique individuals of a unique species."

Check-list of birds

Kumar Ghorpade suggests that when check-lists are published, instead of numbering each entry serially (1,2,3,4 and on), the species number of the Handbook should be mentioned. This would be a useful exercise. For one thing the author would be compelled to *check* the check-list carefully before sending it on to the Newsletter. I hope the authors will use the new scientific names in future.

Regarding re-writing of badly written articles Aasheesh Pittie and Kumar Ghorpade suggest that when I have recast a particular piece it should go back to the author for his approval. I agree that this is the correct procedure. But the fact is that this would be such a time consuming process with the present state of our postal services that it becomes impractical. Someone said that it is often better to be in time than to be perfect, and if in condensing an article, or for reasons of clarity, I do any injustice to the author I would be happy to receive a stern rejoinder.



Kihim Diary

ZAFAR FUTEHALLY, No. 2205, Oakwood Apartments, Jakkasandra layout, Koramangala 3rd Block, 8th Main, Bangalore 560 034

15.04.95

Having suggested that we should write about the enjoyment of birdwatching (NLBW, Vol.35, No.1, page 1), it is my duty to do my bit. We arrived in Kihim, our well exploited seaside village, across Bombay Harbour on the 14th of April, for a 6 weeks stay. The weather was unusually cool for April, and during our first evening stroll in the woodland behind the beach, we saw very little - magpie robins, ashy drongos, grey hornbills, coppersmiths, palm swifts, rufousbacked shrike; and on the village pond a pair of bronzewing Jacanas, a cormorant and a Brahminy kite.

The evening of the 15th was more rewarding. On the beach there was a lovely specimen of the redshank. The beach and the rocks were beautifully lighted by the 5.30 p.m. sun (sunset at 7 p.m.) and the red shank was in his element striding confidently on the sand. The legs were a bright red and the feathers grey brown. Very near the redshank was a

waterbird which I could not identify. It was heavily streaked with dark brown against a pale brown and white base. If it was the same bird which I saw in flight a couple of minutes later, it must have been a whimbrel for its long crescent shaped bill was then clearly seen against the sky. A pair of gull-billed terns flew back and forth, doing the about turn in mid-air as only terns can do, picking up morsels from the ground even more astonishingly than test cricketers do when they pick up a ball on the run. There was a solitary brown-headed gull overhead, going North, perhaps to its breeding ground in Tibet. There was a large congregation of common sandpipers.

21.04.95

We saw and heard the screams of the whitebellied sea eagle. The sight of this bird brings to mind the articles and photos of Loke Wan Tho, Lavkumar Khachar and Prakash Gole. I presume there are no sub-races of this species. They are all the same everywhere. I have a thrilling incident

to relate. Thirty years ago I saw this eagle flying over the sea in Kihim. It was chasing a black-headed gull which had a fish in its beak. It was a glorious chase which lasted quite a while but I could not see the result because both birds had vanished in the distance. The inexpert twisting and turning of the eagle in pursuit of the much more agile gull was a wonderful sight. Few birds in flight are as impressive as this sea eagle when it sails along with wings held in a wide V above its body.

Now that my ears have worn out with the years I do not hear the dawn chorus. But the other day I put on my hearing aid in the morning and was surprised at the racket that was going on. The contributors were koels, crows, red-whiskered bulbuls and magpie robins. A few days back we had an interesting view of an Indian robin fanning its wings and tail to frighten (?) little insects and induce them to come out of hiding so that the bird could get a morsel. Am I right in believing that there is a controversy about the *raison d'être* of this behaviour? Is it believed by some that the tail and wings are spread to keep out the glare of the sun, so that the bird can see its prospect better?

Most of the waders have migrated North. The only bird on the beach is the common sandpiper. There are some records of these birds staying over during summer in their wintering grounds.

22-04-1995

A beautiful day with a bright blue sky and a light breeze. The *kank kank kank* of the W.B. sea eagle quickened my pulse. I went to the beach from which there is a good view of the stretch of casuarinas on which the eagles rest, nest and copulate. In a moment the stately bird was overhead. From beneath I saw its clear cut wedge shaped tail and the lateral black and white band on the wings. It landed about half mile away. The morning's walk brought into view jungle mynas picking nesting material on the ground; magpie robins not quite ready to breed or court their mates; a Blyth's reed warbler doing its best not to give me a good view, but I did focus on its elegant olive back with the dark brown wing marks, and also on its white supercilium; a lone bee-eater sitting on a telegraph wire suddenly flying in the opposite direction in chase of a butterfly suggesting that it has a back vision too; red-whiskered bulbuls; coucals calling coop, coop, coop 1-2-3-4-5, but no response from their mates; a white breasted kingfisher with an unusually long red bill. And best of all a golden-backed woodpecker clinging to the bark of a coconut tree. What a lovely bird with its scarlet crown, the two white stripes on its cheeks with the black stripe in the middle. Its golden back, alas is now known as *flame-back* by the experts, and we will have to make corrections in our Salim Ali. The bird flew on to another coconut tree and began probing into an opening in the trunk. With the sun in my eyes and the trunk in the shade I could not see the details. I imagined that it was feeding the young. I will find out in the evening when the sun is behind me and lights the mystery. (I did and there was no nest hole there).

Yesterday I was looking over the family 'Akhbar Book' and I found the following notes by Salim Ali — 16.11.1960 :

"The first attempt to catch birds with a mist net ended disappointingly. Between all yesterday (15 Nov) and up to 2.00 p.m. today (16 Nov) only 3 birds were caught: 1 spotted babbler, 1 grey drongo, 1 Blyth's reed warbler. 1st and 3rd were ringed. No.2 got away after much fighting and drawing blood. With a number of nets and enthusiastic netters, I am sure some very useful work could be done in the intervals between eating and sleeping.

Arrival 6th Nov. Leaving "just now" 9 Nov (2.00 p.m.) 1954. A single Desert Chat (*Oenathe deserti*) seen yesterday evening feeling lost and forlorn in unaccustomed and unusual surroundings — flying along the beach. Has never been seen in this neighbourhood before.

Sd/-

Salim Ali

Salim's note of 27 May 1943 was published in an earlier issue.

In this note the birds referred to were: Honey Buzzard nesting; whitebacked vultures; 2 flocks Flamingoes (50 x 26 flying N 23 April); 2 pairs Green Bee-eaters and 1 whitebreasted Kingfisher nesting in "Al Murad" compound."

23-04-1995

Looking over the Akhbar Book, I find a note by George Schaller written in 1968 referring to a Kashmir Roller. Must be on its way to Africa. I have not seen any Kashmir Roller in Kihim.

Last evening we saw four rosy pastors at Bhombar a scrub jungle adjoining the beach. These birds are fond of the plant *SALVADORA PERSICA* (The Saviour of Persia) common in the Middle East where the birds breed. Here too there was a colony of these plants. In the evening light with the sun behind us their rosy backs looked extremely beautiful. Without reference to the context the play of light on the feathers of a bird results in curious optical illusions. This morning at 8.00 a.m. while watching waders and egrets on the beach I saw a blinding green light on a rock against which the waves were splashing. For a while I thought it might be a green velvet cloth which had got attached to a barnacle. But its brightness intrigued me and I went nearer. It was the sheen on the back of the common kingfisher. My son Murad reported seeing several oyster-catchers and a whimbrel on the beach. I noticed that the common sandpipers had become aggressive against their own kind. Perhaps in preparation for breeding activities (?)

27-04-1995

We went to Matheran (the smallest hill station in the world) on the 25th. Now we can drive upto the top, and

fortunately no cars are permitted beyond the Parking area. Like all our hill stations this too has become unsightly and over-crowded. Economics has pushed ecology to the background. On the morning of the 26th (yesterday) I was walking towards Charlotte Lake at 8.00 a.m. despairing of seeing anything interesting in the way of birds. Suddenly the loud warbling of a male shama (*Copsychus malabaricus*) announced that this forest loving creature had survived the onslaught of hoteliers. I found that the merry calls of the male shama was invariably preceded by the soft *chi chi* of a bird I presumed to be the female. Well over ten times I heard this duet. A *chi chi* followed immediately by the male's rejoinder, which I thought could be rendered as "Where have you gone?" It was charming music and what a lovely tone of voice. This made the visit to Matheran worthwhile. As on Kihim, coucals are calling but only one way so far. The coop coop of the male (?) fetches no response. Are the females involved in Family Planning.

12-05-1995

White bellied sea eagles active overhead and calling frequently. The pair is always chased by crows. The nesting season should be over by now; why are they calling and behaving like lovers out of season.

16-05-1995

Grey hornbills (*Tokus birostris*) with the casque, a species found from the Himalayas to Kerala. Pairs chasing each other. The nesting season is March to June. Several banyans in fruit so the birds are well fed. The banyan is an invaluable tree for birds because different trees fruit in different months, so there is food over an extended period.

21-05-1995

Last evening saw a lovely male iora — jet black back with its white stripes and mango-yellow below. A sight difficult to forget. We leave for Bombay tomorrow.



A Specific Decoy Trap for White-breasted Water-hen in Nowgaon, Assam

LUTFUR RAHMAN SAIKIA, PRASANTA KUMAR SAIKIA and P.C. BHATTACHARJEE, Department of Zoology, Gauhati University, Animal Ecology & Wildlife Biology Laboratory, Guwahati 781 014, Assam, India

The white-breasted water-hen (*Amaurornis phoenicurus*) is known as 'Dauk' in Assam. This resident species of Rallidae is distributed throughout west Pakistan, North India including Nepal, Sri Lanka and Bhutan-Duars and throughout Peninsular India including the Laccadives. The birds are found from the plains to 1500 m height. They are frequently seen around villages and even in public parks within the limits of populous towns. The species has recently been threatened in some districts of Assam.

These birds are regularly captured by some people in Nowgaon district of Assam for sale and consumption. The capturing of the birds is done on a large scale during the mating season. The breeding season starts from April and continues up to July, and the mating commences with the first showers of the monsoon, in the months of April and May. At this time they clamber up the thorny bamboo clumps and shrubs with great agility, to command an open view of the surroundings and utter their resounding mating calls. This is obviously done to attract the opposite sex in the breeding season. The females are sexually more aggressive than the males; hence they wander here and there in search of male partners. Taking advantage of this behavioural phenomenon, the trappers use male white-breasted water-hen as decoys to attract the females of the species.

Preparation of decoys

The trappers domesticate a male white-breasted water-hen in their own residence. They capture the

water-hen chicks immediately after hatching, and nurture them with intensive care. To have a strong mating call from a mature decoy, they give them selective food items, such as soft body parts of molluscs, earth-worms, fresh fish, etc.

Capturing technique of wild birds

The capturing of the wild water-hen is performed in two steps, (a) Attracting the birds to a suitable place and (b) Capturing by their decoy-snare trap.

(a) Attracting the wild birds

As mentioned above, the trappers use male mature decoys for attracting the female birds. They keep the decoy inside a cage, and at dusk, the decoy within its cage is lifted to a suitable height with the help of a straight bamboo stem. The bamboo stem has an artificial wheel at the upper end, which acts as a pulley. Thus the cage can be hoisted up by pulling the free end of the rope (Fig.1). The cage is kept at a definite height from the ground, because during the night the mating call of the decoy can be heard from a long distance which attracts the female birds of the surrounding habitats.

After placing the decoy at the top of the bamboo, the trappers observe the movement of the wild birds carefully. In response to the mating calls of the decoy, the female water-hen of the surrounding habitat get attracted and start flying above and near the cage, with a resounding "Krek-krek-krek" call, and thus trying to approach the male inside the cage for mating. As the decoy is kept inside the

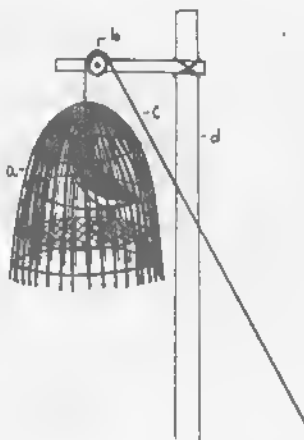


Fig. 1 Uplifted Cage with a domesticated
A. Phoenicurus
(a) Cage, (b) Pulley, (c) Rope, (d) Bamboo Pole

cage, and at a optimum height, the wild hen cannot approach the decoy, and after flying for sometime, they get tired and ultimately come to rest nearby. By the early morning of the next day the trappers dismantle the cage of decoy by loosening the rope with the help of the wheel.

(b) Capturing the wild female by snare trap

This is the second and final phase of the trapping method. The decoy with its cage is placed on the ground of the nearby jungle the next morning, where the wild females are waiting to have a mating chance. Now, three rectangular

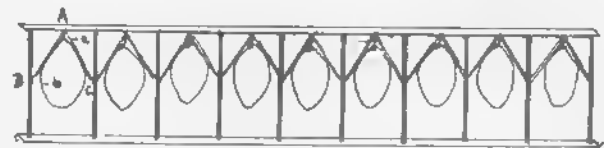


Fig. 2. Moi Phand – A type of Snare Trap

(a) Double sided cord, (b) Noose

A, B, C, Fixation point of double sided cord

snare traps are placed vertically around the cage (Fig.2). Each rectangular snare trap is made up of bamboo sticks which have nine squared openings. In each opening two small double sided chords (spreader) run from the middle of the upper (pt.A) to the mid point of the two perpendicular side (pt. B&C). The free end of the noose is tied to the point A, with its side resting freely on the spreader. The thread used for noose and spreader is made up of fibre of Ramie tree (*Boehmeria nivea*). Listening to the call of the decoy the wild females try to reach the cage and displace the noose from the spreaders and thereby get caught by the noose in their neck or leg.

In Assam, such types of trapping devices are in practice since time immemorial, but there is no record or study of the types and methods, or the persons involved in trapping. Keeping in mind the growing importance of environmental education and ecological balance a study should be undertaken with a view to protect the birds from these trappers. Otherwise Assam may have to lose a number of resident bird species in the near future.



Birds of Pulicat Lake & Kingfishers Lured to Death

VINOJ MATTHEW PHILIP, Environmental Resources Research Centre, P.B. 1230, Peroorkada, Trivandrum 695 005, Kerala

At the end of August and beginning of September '94, I spent some time in the Pulicat estuary and its environs. It was the premonsoon season and the water level in the region had receded considerably in most places, revealing extensive mudflats. The vast brackish to saline lagoon is biogeographically significant as a 'refuelling site' for hundreds of migratory birds in winter, making it one of the most precious wetlands on the east coast of India. The North-East monsoon starts during October to November every year. I hereby wish to present a brief list of birds of Pulicat lake based on my recent study in and around the region.

Topography of Pulicat lake

Pulicat lake (Lat 13° 23' to 13° 47' N and Long 80° 2' to 80° 16' E) is the second largest brackish water lake in India, next only to the Chilka Lake in Orissa. It covers an average area of about 461 sq km. The average depth of the lake is about 1.5 metres and the maximum depth is 7.0 metres. The lake at its southern end, close to Pulicat town, opens into the

Bay of Bengal by a narrow mouth. The sea water enters the lake near Sri Hari Kota in the northern end (Andhra Pradesh) and flows out into the Bay of Bengal in the southern end (Tamil Nadu). The Buckingham Canal runs parallel to the entire length of the estuary and opens into it at a few places.

I made a list of 28 species of birds during this brief visit. Among them I must mention the sighting of the lesser frigate bird (*Fregata minor*). In all my previous visits to the lake since my college (Madras Christian College has an aquacultural lab in Pulicat town where annually, research is undertaken) days, I have not seen this bird. Other species worth mentioning are greater flamingoes, lesser flamingoes, spot billed pelicans and painted storks. The species of waterbirds sighted are listed below :

Sl. No.	Common Name	Scientific Name	No. of birds
01	Little grebe	<i>Tachybaptus ruficollis</i>	06
02	Spotbilled pelican	<i>Pelecanus philippensis</i>	21
03	Lesser frigate bird	<i>Fregata minor</i>	02

04	Grey heron	<i>Ardea cinerea</i>	01
05	Purple heron	<i>Ardea purpurea</i>	01
06	Large egret	<i>Ardea alba</i>	01
07	Pond heron	<i>Ardeola grayii</i>	05
08	Cattle egret	<i>Bubulcus ibis</i>	07
09	Median egret	<i>Egretta intermedia</i>	03
10	Little egret	<i>Egretta garzetta</i>	23
11	Painted stork	<i>Ibis leucocephalus</i>	50+
12	Greater flamingo	<i>Phoenicopterus ruber</i>	17
13	Lesser flamingo	<i>Phoeniconaias minor</i>	02
14	Pariah kite	<i>Milvus migrans</i>	04
15	Brahminy kite	<i>Haliastur indus</i>	01
16	Osprey	<i>Pandion haliaetus</i>	01
17	Painted snipe	<i>Restratula benghalensis</i>	11
18	Redwattled lapwing	<i>Vanellus indicus</i>	05
19	Grey plover	<i>Pluvialis squatarola</i>	01
20	Ringed plover	<i>Charadrius hiaticula</i>	01
21	Little ringed plover	<i>Charadrius dubius</i>	04
22	Curlew	<i>Numenius arquata</i>	13
23	Wood/spotted sandpiper	<i>Tringa glareola</i>	02
24	Common sandpiper	<i>Tringa hypoleucos</i>	01
25	Whiskered tern	<i>Chlidonias hybrida</i>	02
26	Lesser pied kingfisher	<i>Ceryle rudis</i>	02
27	Common kingfisher	<i>Alcedo atthis</i>	02
28	Whitebreasted kingfisher	<i>Halcyon smyrnensis</i>	07
	Total No. of Birds		196+

A visit to Aavarivakkam village adjoining the backwaters on the morning of 9th September '94 revealed the presence of 50+ painted storks. These birds were resting on the bunds of a newly constructed (aquacultural) shrimp pond, when a farm worker who was walking from the opposite direction, flushed them out. The sudden "take off", of these birds and their soaring overhead, before deciding to fly off to another safe haven for refuge was truly a sight to behold.

I met a few farmers who complained that birds were a serious problem for their shrimp business, as they 'litt off' large numbers of shrimp on the wing every day.

So far however, no traps have been set up, nor have the farmers shot the birds. The menace of the birds has been checked to a certain extent by trying polythene sheets to long poles driven along the bunds (embankments) of the ponds. These sheets flutter in the wind and create a sound that scare the persistent bird pests. Even so, the birds take their toll and anger is written on the farmers' faces. Only God knows what measures they will adopt next. Pulicat lake is set to create a revolution in aquaculture, in years to come. Almost everyone talks about shrimp farming today and brokers make a fast buck, as the lands are sold at a fast rate (just like hot cakes). To what degree it is going to affect the avifauna of the region is for us to wait and see.

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KINGFISHERS LURED TO DEATH

About 30 km south west of Madras, (3 km from Tambaram) in Mudichur lies one of the largest ornamental fish farms of India. Spread over 4 acres, the Southern India Aquarists (SIA), is a productive breeding centre of some of the most fascinating varieties of both endemic and exotic, tropical fresh water ornamental (aquarium) fishes of the world.

The farm is transected by grow-out ponds, breeding set ups or dirt systems and nursery tanks in which the fishes of different sizes are graded into. The farm has a steady influx of visitors, some of whom are avian namely kingfishers and crows. These birds are attracted to the easily available delicacies from a list of wide ranging ichthyofauna, especially gold fishes (*Carasius auratus*), sword tails (*Xiphophorus helleri*), platies (*X. maculatus*), guppies (*Lebistes reticulatus*), dwarf gouramies (*Colisa lalia*) and black mollies (*Poecilia mexicana*).

Farm activity begins early in the morning with routine checking of the parameters of water quality and feeding schedules. Predators like water snakes, frogs, and 'pest' fishes are common along with crows (*Corvus splendens*) and (*C. macrorhynchos*) and three species of kingfishers namely the white breasted (*Halcyon smyrnensis*), lesser pied (*Ceryle rudis*) and the small blue or common (*Alcedo atthis*). All, end up mercilessly killed by the farm workers and security men who are armed with catapults and sticks. Though the ponds have a wire netting, all around them including the upper sides, surface, the small blue kingfisher manages to enter into the ponds and help itself to a fish or two. The security personnel, see their chance now and enter through the wired doorway and shoot the bird right on the head knocking it senseless into the water. The precision with which they do it only reflects on the fact that they have attained this mastery over the years, by insane slaughter of hundreds of these 'jewels of flight'.

Lesser pied kingfishers prove to be excellent targets in mid air, when they position themselves by hovering exactly above the fish in the breeding ponds below. The only significant difference being that, instead of the bird getting away with a successful catch, it finds its fate never to rise from the 'water of doom'. Now it is the Homo sapiens who has made his catch. White breasted kingfishers also find themselves in similar situations but as stationary targets. The dead birds are immediately stripped off their feathers, to the flesh and cooked by the men and are either consumed or fed to the farm dogs. The only other birds who manage to get away on time are the crows especially the Indian house

crow (*Corvus splendens*) who even aptly time their visit when it is lunch time for the farm hands. They "lift off" gravid, live-bearing, (ovo-viviparous) female fishes from the small, weeded, glass breeding tanks if the wire netting is not in place. With their cunningness and a highly 'conditioned' exhibition of learned behaviour, they make good their escape, with their prize, in the nick of time before the approach of the men. The kingfishers from the area are on the decline, whereas the crows are stable. Does it not reflect upon the often heard remark, in our present day world that "it's only the innocent who are victimized, while the rest go

scot free ... ?" Isn't it also a tragedy that these 'jewels of flight' are lured to their doom, in their quest to feed on their natural food and satisfy hunger, which is a basic instinct? Or is it a matter of ethics - to fish or not to fish? In this material world, who cares for these things anyway ... ?

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Pesthood of the White-backed Munia

H. DANIEL WESLEY, 126, Ramalinganagar South, Tiruchirappalli 620 017

Fowlers have told me that every year they catch 20,000 or more munias for local and overseas consumption as cage birds. In nature they affect grasses and cultivated crops, so that they are usually considered pests, although "no reliable statistical data are available on the economic status of birds in India" (Salim Ali : BNHS document). Damage to rice nurseries in the Punjab and to millet, besides the listing of birds visiting rice crops and assessing the damage due to migrant starlings, have been reported (Bhatnagar 1975; Dhindsa & Toor 1980; Francis Nathan & Rajendran 1982; Gole, Prakash 1982; Jotwani et al 1982).

I made a study during summer of 1989, on the food preference of the white backed munia (*Lonchura striata*), presenting it with four kinds of grains : Pearl millet (*Pennisetum typhoides*) - the wild variety and the hybrid km² - ragi (*Eleusine coracana*) and paddy (*Oryza sativa*). Six birds were obtained from the seller of cage-birds and maintained in a cage of 45 x 30 x 30 cm.

The investigation was conducted for twelve days, three days for each of the grains offered in this order : km² ragi, wild millet and paddy. Each day, the grain (35 g) was presented in a dish inside the cage before dawn, and what

remained in the dish was weighed after the birds had gone to roost. The grains scattered on the cage-floor and the husk was collected and weighed separately. Those in the water-dish were collected, dried, weighed and accounted as wastage along with those collected from the floor of the cage (Table 1). Water was placed in another dish in the cage.

An analysis of the data shows that the Munia is a consumer of all the four kinds of grains though not with equal enthusiasm; the order of preference being paddy, km² ragi and wild millet. It is therefore assumed that the species would take these grains from the standing crops too. The flock size of "8 to 15 birds" may assume "considerable size where they do local damage to cereal crops". (Ali, Salim & Ripley 1987).

Exactly how much damage is being done in the field is not known, but it is reasonable to assume that it is a pest of the economic crops of man. The fact that it "gleans on the ground along the roadside and in paddy stubbles" (Salim Ali & Ripley 1987) and takes time in husking the grains before swallowing them may lessen the scale of the damage that could be inflicted to the standing crops. It nevertheless projects the bird as a potential pest of stored grains. In fact, it may be a pest of both. Though it may not be as close a

Table 1
Bird⁻¹ day⁻¹ consumption of four grains by the white-backed munia.

Grains offered : (35 g)	Remnant	Wastage	Husk	Average daily consumption by six birds	Bird ⁻¹ day ⁻¹ consumption	% body wt. consumption of grain
Paddy	16.32 ± 0.67	0.43	1.39	18.25 ± 0.67	3.04	22.35
Km ²	17.34 ± 1.66	0.93	0.42	16.73 ± 1.71	2.78	20.44
Ragi	19.19 ± 0.73	2.99	0.38	12.82 ± 0.74	2.13	15.66
Wild millet	21.96 ± 0.78	0.74	0.42	12.30 ± 0.83	2.05	15.07

commensal of man as the sparrows are, there is already circumstantial evidence of its being on the way to becoming one (Arunachalam Kumar 1984).

Of ecological interest is the fact that the wild millet is the least preferred of the grains because of its very small size that may not lend itself easily to husking. Also, the wasted grains suggest that all are not successfully swallowed and they help in the propagation of the grasses while feeding from the crops, or while drinking. The weight of the birds not determined and assuming an arbitrary value of av. 13.6 g, the greatest % of body wt. consumption of the grains at 3.04 g bird⁻¹ day⁻¹ was 22.35 (Table 1). Whether or not this is the maximum consumption a bird is capable of is not known. If it be so, the bird seems not to have reached satiation for the grains other than paddy. Perhaps the lack of variety under artificial conditions was discouraging. In nature, they would fill up on other grass seeds as well, being not monophagous.

In order, to be able to ascertain its economic status and for effective control measures the munia has to be studied in all its aspects - food items, feeding biology, population size and its fluctuation, distribution and longevity. Pesticides being inadvisable, we must find integrated measures which should involve the control of the population of the bird. The traditional methods of scaring them away and perhaps the

desirability of allowing other grasses to grow around the crop fields and in the wild on whose seeds too they depend, must be employed. Live and let live may be the only way by which to preserve and conserve nature for our own Welfare!

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Birds as Monitors of Forest Quality

SHAHID ALI

It has been the finding of several research projects in India and elsewhere in the tropics (eg. Beehler et al, 1987), that large birds and animals, or those that are very specially adapted to local environmental conditions, are the first to disappear as a result of forest fragmentation or other major man-induced disturbance. In the context of the western ghats, we believe that monitoring population trends and breeding densities in four well represented groups of forest birds, viz. the hornbills, woodpeckers, barbets and forest galliformes would provide a useful index on the status and productivity of that forest tract. Also by extension, its capacity to support a community of forest birds could be determined. A careful monitoring of the densities of various species of woodpeckers and barbets could also be used to optimise silvicultural practices (sensu Welsh, 1987). We have selected these families using the following criteria :

1. All four families comprise resident species whose individuals could be expected to track changes in the environment throughout the year, and be finely adapted to natural variations in local environments.
2. The first three families constitute small, medium and large species that require nest cavities to breed. These are more frequent in old, mature forest stands. Large birds like hornbills, by virtue of relatively larger energy

requirements, may have quite large home ranges in habitats that fulfill their special requirements. Food resources like fruiting fig and other forest trees in tropical evergreen and semi-evergreen forests in the tropics are ephemeral; fruiting trees like figs often fruit singly or in clumps that are scattered over large areas, and therefore necessitate extensive movements by frugivorous birds. Density of breeding pairs of hornbills will thus probably reflect the extent to which a given forest tract can provide feeding and nesting opportunities for a community of large cavity-nesting frugivores.

3. Forest galliformes include peafowl, junglefowl and spurfowl that are at the apex of the detritivore food chains in the leaf litter of forest floors. Their food, primarily arthropods, beetles, tubers and seeds brings them in direct contact with chemicals that frequently remain as residues that have percolated into the forest from surrounding agricultural areas. The densities and breeding success of such species will throw much light on the 'unseen' pressures that these forests are under, and how they are coping with them.
4. Woodpeckers have been shown to increase in density in response to decaying wood (Welsh, 1987). This trend has been suggested for use in Canadian boreal forests to optimise the time when timber is cut. The diversity of

woodpeckers and barbets in the western ghats may also yield useful information for silviculturists on teak and other plantations.

Safety of the Western Ghat Avifauna is connected with forest fragmentation, encroachment of open habitats, and invasion by generalist species (bulbuls, mynas that occupy nest holes of true forest species)

The importance of the western ghats as migratory corridor for many forest species, and the impact on these populations of forest fragmentation.

Biodiversity; associations; medicinal plants; aesthetics - Dudhsagar Falls.

Consequences of wood collecting, grazing and burning and residues of chemical spraying; effects on insect abundance. By extension, one can easily imagine that most of these trends will, through a ripple effect, affect all the vertebrate fauna of these forests. If the pressure persists, the consequences of this weakening ecological web will also manifest itself on lower forms of life. One of the worst disasters of such a breakdown of forest support systems will be the extinction of countless, and yet undocumented plant forms that hold secrets for as yet undiscovered cures in medicine. Birds, by virtue of being the focus of interest to naturalists for many generations, by lending themselves to relatively easy observation, and by their fascinating, well adapted life-styles, are the best indicators we have of the health of our terrestrial environment.

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Unforgettable Moments with Ashy Minivet

C SUSANTH KUMAR, Prakriti, Indiranagar, Peroorkada P.O., Thiruvananthapuram, Kerala 695 005

It was a fine morning of February (19.02.95). My young friend K Rafeek and I were watching a curious hunting party of birds at Aripa; a small evergreen patch 52 km away from Thiruvananthapuram city. As we continued on our way, we saw malabar grey hornbill, forest wagtail, yellowbrowed bulbul, green imperial pigeon, largebilled leaf warbler, malabar whistling thrush, emerald dove, little spider hunter, booted warbler, black woodpecker and crested hawk eagle.

After hours of enchantment we rested on a small rock near the forest stream to have our breakfast. Suddenly a hunting party of birds arrived. They visited the trees near by the stream. Male orange minivets showed their flaming feathers in a glitter, gold fronted chloropsis whistled and mimicked other birds, at the same moment a little bird came into the scene. Without binoculars I guessed it as a pied flycatcher shrike (*Hemipus picatus*). Rafeek was more sensitive and he took the binoculars and watched the bird carefully. His watchful eyes faced me with a puzzle.

I took my binoculars and observed the bird a while. The bird was a little larger than a small minivet (*Pericrocotus*

flammeus). The head was grey, a black line ran from the base of its beak past the eye to the back portion of the head; the beak was black and slender, the dark tail had white outer feathers (a white wing-bar was seen in flight). The bird was uniformly ashy grey and white below. These were the revelations of our field observation. It had all resemblance to the description of the female ashy minivet (*Pericrocotus divaricatus*) in the 'Handbook of the Birds of India and Pakistan' (Salim Ali & S.D. Ripley). It was an ecstatic moment.

After confirming our bird as the ashy minivet we observed her very closely for about 45 minutes. Occasionally it made a sweet call like the following 'Tutui...Dutudivi...Tutui...Tutui...Dutudivi...Tutui...' (threenote call). After this unforgettable display to us the bird flew far away to the wide stretch of wilderness. The very same day we had another opportunity to observe a solitary male Alexandrine parakeet at Aripa. Alexandrine parakeet is the rarest parakeet of Kerala.

An Audio Guide to the Birds of South India, and Notes on Night Herons and Black Storks



S. THEODORE BASKARAN, Chief Post Master General, Gujarat Circle, Ahmedabad 380 001

This is a touching story of a bird enthusiast, who single handedly has been working at a project in the field of bio-acoustics. His work will have far reaching consequences in bird studies. Calls are much more distinct than plumage and to know about the prevalence of nocturnal birds in any area, calls are crucial. For the first time in the country, an audio cassette of bird calls has been brought out. It has been released in London by an outfit called Wild At Heart and costs £ 8.50. This is the result of the work of P.S. Sivaprasad, a computer engineer at Coimbatore, who started recording bird calls nearly twenty years back. He uses a J V C Two-in-one portable machine and a 11" parabolic reflector, with a directional microphone. Working mainly in the Western ghats, he has now more than 250 calls on tape. The scientific and popular names of the birds are announced by Krys Kazmierczak. A booklet which comes along with the tape, gives the name, place and time of recording the calls. Background noises are also explained in the booklet. The sequence in which the calls have been arranged in this tape follows The Handbook of Birds of India and Pakistan. The number assigned to each bird in the Handbook is also given. The quality of recording is very high indeed. But the difference between calls and songs have not been made in the booklet. Ornithologists describe a bird song as 'a series of sounds consistently repeated according to some specific pattern and produced, as a rule, mainly by males and usually during breeding season.' It will be useful if this distinction can be made clear in the Indian edition which Sivaprasad is planning to bring out soon. All wildlife enthusiasts would await that eagerly and I request Sivaprasad to let the readers of the Newsletter know when it comes out. In addition to birds, Sivaprasad has recorded the calls of 6 animals, 12 amphibians and 15 insects. Though there are outfits like Wildlife Sound Recording Society in the U.K., in India there are very few votaries to this exacting hobby of wildlife sound recording and I am sure that this cassette will generate new interest. For more information write to P.S. Sivaprasad, 51, Ansari St, Ramnagar, Coimbatore - 641 009.

AN AUDIO GUIDE TO THE BIRDS OF SOUTH INDIA. PART I.
Recorded and Edited by P.S. Sivaprasad. 1994, Price £ 8.50.

Coping with summer : The Night Herons of Ahmedabad

In the old part of Ahmedabad city is Kankaria lake - a large body of water, in a circular tank built in the 17th century, complete with retaining walls. There is a zoo adjacent to the lake and in the trees there, a large number of night herons roost during day time. On the 14th of May last year, myself and my friend Dr. Ramanathan, who has been groomed in birdwatching by the Madras Naturalists Society, were driving along this lake. Summer in Ahmedabad is cruel. Temperature rises to a searing 47 degree. It was around 12.45 in the afternoon and the sun was bright and harsh. We saw something we have never seen before. Night herons, three of four at a time, flew down from their roost, plopped into the water as if in glee, swam for a few minutes and then took off, back to their roost. We watched this for a full 15 minutes and the birds kept up their flights back and forth for a cooling dip in the lake.

Black Storks of Gir sanctuary

It was 23rd December 1994. We were driving from Junagadh to Sasan Gir Lion Sanctuary, in Gujarat. Three km from the entrance to the sanctuary area the road takes a sharp bend and to the right, half a km away, lies a lake. On the left of the road is a dilapidated shooting lodge of the former Nawab of Junagadh. Even as we were driving, we could spot some large birds on the edge of the lake. The birds stood motionless, like so many cardboard cut-outs. By the silhouette, I realized that this is a species I have not seen before. My wife and I got down and walked towards the lake and observed the birds through binoculars. They turned out to be black storks (*Ciconia nigra*); a quick reference to The Field Guide confirmed this. There were eleven birds. They are winter visitors and are much smaller than the black-necked stork which they resemble. In fact only these two storks have black-feathered head. But look for the red beak, the unmistakable identification of the black stork.



Checklist of the Birds of Dharan, Nepal

BHARAT RAJ SUBBA, Post-Graduate Campus (T.U.), Biratnagar, Nepal

Dharan is known as the gate of the hills of Mechi, Koshi and Sagarmatha zones of the eastern

development region of Nepal. It is situated at the bottom of the Mahabharat range. It is also one of the commercial

centres of Nepal. Dharan faces the south so one can view the scene of the Terai up to the horizon. In between Dharan and the open cultivated land of the Terai, lies a thick forest called Charkose Jhadi (12.8 km breadth).

A subtropical climate prevails here. The rain fall is higher than that of other places of eastern Nepal. The vegetation and physical features of Dharan are suitable for many species of birds. In spite of its small area many species of birds can be observed here throughout the year. Fruit bearing trees such as *Ficus benjamina*, *Ficus religiosa*, *Ficus cunia*, *Ficus lakocha*, *Eugenia jambolana*, *Lichi chinensis*, *Murraya koenigii*, *Erythrina aspara* and among climbers *Ipomoea* spp. and timber trees such as *Shorea robusta*, *Dalbergia sissoo* etc. and several shrubs and herbs provide birds shelter and food here.

Attempts were made by the author to prepare a checklist of the birds of Dharan (Lat 26° 28' N, Long 87° 28' E, altitude 365 m to 61 m) during the period April 15, 1984 to April 15, 1989; and from March 4, 1994 to March 1995.

Some of the important sites for birdwatching in Dharan are Ghopa camp, Base camp, Hattisar, Bijayapur, Tinkune, Phusre, Panchkanya. Spring in Dharan, provides many opportunities for bird-watchers to enjoy the enchanting songs of birds. Among several beautiful birds are racket-tailed drongo, paradise flycatcher, wall creeper, white-capped river chat, white-crested laughing thrush, rose breasted parakeet, blossom-headed parakeet, scarlet minivet and others.

Deforestation has led to the drying of water sources resulting in changes to the habitat of some birds. A few years ago more than a thousand mango trees were felled at Hattisar as a result of which many beautiful species of fly-catchers have left the area.

The checklist incorporates 119 species of birds of 36 families. The identification of birds was done with the help of books listed in the reference.

Check List of Birds of Dharan, Nepal

Family : Ardeidae

- | | |
|-----------------|-------------------------|
| 1. Pond heron | <i>Ardeola grayii</i> |
| 2. Cattle egret | <i>Bubulcus ibis</i> |
| 3. Little egret | <i>Egretta garzetta</i> |

Family : Accipitridae

- | | |
|--------------------------|-------------------------|
| 1. White-backed vulture | <i>Gyps bengalensis</i> |
| 2. Black vulture | <i>Torgos calvus</i> |
| 3. Indian griffon | <i>Gyps indicus</i> |
| 4. Crested serpent eagle | <i>Spilornis cheela</i> |
| 5. Sparrow hawk | <i>Accipiter nisus</i> |
| 6. Black kite | <i>Milvus migrans</i> |

Family : Falconidae

- | | |
|-------------|---------------------------------|
| 1. Falconet | <i>Microhierax caerulescens</i> |
|-------------|---------------------------------|

Family : Phasianidae

- | | |
|-------------------------|-----------------------------|
| 1. Kalij pheasant | <i>Lophura leucomelanos</i> |
| 2. Red jungle fowl | <i>Gallus gallus</i> |
| 3. Common bustard quail | <i>Turnix suscitator</i> |

Family : Charadriidae

- | | |
|-----------------------|-------------------------|
| 1. Red wattle lapwing | <i>Vanellus indicus</i> |
|-----------------------|-------------------------|

Family : Columbidae

- | | |
|------------------------------|----------------------------------|
| 1. Spotted dove | <i>Streptopelia chinensis</i> |
| 2. Indian ring dove | <i>Streptopelia decaocto</i> |
| 3. Red turtle dove | <i>Streptopelia traquebarica</i> |
| 4. Thick-billed green pigeon | <i>Treron sphenura</i> |
| 5. Emerald dove | <i>Chalcophaps indica</i> |

Family : Psittacidae

- | | |
|----------------------------|--------------------------------|
| 1. Rose ring parakeet | <i>Psittacula krameri</i> |
| 2. Blossom-headed parakeet | <i>Psittacula cyanocephala</i> |
| 3. Slaty-headed parakeet | <i>Psittacula himalayana</i> |
| 4. Rose-breasted parakeet | <i>Psittacula alexandri</i> |

Family : Cuculidae

- | | |
|-------------------------|------------------------------|
| 1. Eurasian cuckoo | <i>Cuculus canorus</i> |
| 2. Indian cuckoo | <i>Cuculus micropterus</i> |
| 3. Banded bay cuckoo | <i>Cacomantis sonneratii</i> |
| 4. Himalayan cuckoo | <i>Cuculus saturatus</i> |
| 5. Pied crested cuckoo | <i>Clamator jacobinus</i> |
| 6. Dark cuckoo shrike | <i>Coracina melaschistos</i> |
| 7. Common hawk cuckoo | <i>Cuculus varius</i> |
| 8. Indian koel | <i>Eudynamis scolopacea</i> |
| 9. Drongo cuckoo | <i>Surniculus lugubris</i> |
| 10. Large green malkoha | <i>Rhopodytes tristis</i> |
| 11. Small coucal | <i>Centropus toulong</i> |

Family : Strigidae

- | | |
|---------------|------------------------------|
| 1. Barred owl | <i>Glaucidium cuculoides</i> |
|---------------|------------------------------|

Family : Apodidae

- | | |
|----------------|-------------------------|
| 1. House swift | <i>Apus affinis</i> |
| 2. Palm swift | <i>Cypsiurus parvus</i> |

Family : Alcedinidae

- | | |
|------------------------------|---------------------------|
| 1. White-breasted kingfisher | <i>Halcyon smyrnensis</i> |
|------------------------------|---------------------------|

Family : Meropidae

- | | |
|------------------------------|----------------------------|
| 1. Green bee-eater | <i>Merops orientalis</i> |
| 2. Blue-tailed bee-eater | <i>Merops philippinus</i> |
| 3. Blue-bearded bee-eater | <i>Nyctornis athertoni</i> |
| 4. Chestnut-headed bee-eater | <i>Merops leschenaulti</i> |

Family : Coraciidae

- | | |
|-----------------------|------------------------------|
| 1. Indian roller | <i>Coracias bengalensis</i> |
| 2. Broadbilled roller | <i>Eurystomus orientalis</i> |

Family : Upupidae

- | | |
|-----------|--------------------|
| 1. Hoopoe | <i>Upupa epops</i> |
|-----------|--------------------|

Family : Capitonidae

- | | |
|----------------------------|-------------------------------|
| 1. Crimson breasted barbet | <i>Megalaima haemacephala</i> |
| 2. Blue throated barbet | <i>Megalaima asiatica</i> |
| 3. Great himalayan barbet | <i>Megalaima virens</i> |

Family : Picidae

- | | |
|-----------------------------------|-------------------------------|
| 1. Large yellow-napped woodpecker | <i>Picus flavinucha</i> |
| 2. Brown-crowned pigmy woodpecker | <i>Dendrocopos nanus</i> |
| 3. Large golden backed woodpecker | <i>Chrysocolaptes lucidus</i> |

Family : Hirundinidae

- | | |
|---------------------|------------------------|
| 1. Barn swallow | <i>Hirundo rustica</i> |
| 2. Striated swallow | <i>Hirundo daurica</i> |

Family : Lanidae

- | | |
|-------------------------|-----------------------------------|
| 1. Black-headed shrike | <i>Lanius schach</i> |
| 2. Rufous-backed shrike | <i>Lanius schach</i> |
| 3. Brown shrike | <i>Lanius cristatus</i> |
| 4. Lesser wood shrike | <i>Tephrodornis pondicerianus</i> |

Family : Oriolidae

- | | |
|------------------------|---------------------------|
| 1. Golden oriole | <i>Oriolus oriolus</i> |
| 2. Black-headed oriole | <i>Oriolus xanthornus</i> |
| 3. Black-naped oriole | <i>Oriolus chinensis</i> |

Family : Dicruridae

- | | |
|-------------------------------|------------------------------|
| 1. Black drongo | <i>Dicrurus adsimilis</i> |
| 2. Ashy drongo | <i>Dicrurus leucophaeus</i> |
| 3. Hair-crested drongo | <i>Dicrurus hottentottus</i> |
| 4. Little bronzed drongo | <i>Dicrurus aeneus</i> |
| 5. Large racket-tailed drongo | <i>Dicrurus paradiseus</i> |
| 6. Small racket-tailed drongo | <i>Dicrurus remifer</i> |

Family : Sturnidae

- | | |
|-------------------------|------------------------------|
| 1. Common myna | <i>Acridotheres tristis</i> |
| 2. Talking myna | <i>Gracula religiosa</i> |
| 3. Gray-headed myna | <i>Sturnus malabaricus</i> |
| 4. Spot-winged starling | <i>Saroglossa spiloptera</i> |

Family : Corvidae

- | | |
|-------------------|------------------------------|
| 1. House crow | <i>Corvus splendens</i> |
| 2. Jungle crow | <i>Corvus macrorhynchos</i> |
| 3. Indian treepie | <i>Dendrocitta vagabunda</i> |
| 4. Green magpie | <i>Cissa chinensis</i> |

Family : Pycnonotidae

- | | |
|-------------------------|------------------------------|
| 1. Red-vented bulbul | <i>Pycnonotus cafer</i> |
| 2. Red-whiskered bulbul | <i>Pycnonotus jocosus</i> |
| 3. White-cheeked bulbul | <i>Pycnonotus leucogenys</i> |

Family : Muscicapidae

- | | |
|----------------------------|--------------------------------|
| 1. Pied bush chat | <i>Saxicola caprata</i> |
| 2. Paradise flycatcher | <i>Terpsiphone paradisi</i> |
| 3. Red-breasted flycatcher | <i>Muscicapa parva</i> |
| 4. Slaty blue flycatcher | <i>Muscicapa leucomelanura</i> |
| 5. Verditer flycatcher | <i>Muscicapa thalassina</i> |
| 6. Little pied flycatcher | <i>Muscicapa westermanni</i> |
| 7. Magpie robin | <i>Copsychus saularis</i> |
| 8. Tailor bird | <i>Orthotomus sutorius</i> |
| 9. Black redstart | <i>Phoenicurus ochruros</i> |

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|-----------------------------|--------------------------------|
| 10. Plumbeous redstart | <i>Rhyacornis fuliginosus</i> |
| 11. White-capped river chat | <i>Phoenicurus schisticeps</i> |
| 12. Collared bush chat | <i>Saxicola torquata</i> |

Family : Sylviidae

- | | |
|-----------------------------|--------------------------------|
| 1. Clamorous reed warbler | <i>Acrocephalus stentoreus</i> |
| 2. Dusky leaf warbler | <i>Phylloscopus fuscatus</i> |
| 3. Crowned leaf warbler | <i>Phylloscopus reguloides</i> |
| 4. Yellow-eyed leaf warbler | <i>Seicercus burkii</i> |
| 5. Brown hill prinia | <i>Prinia criniger</i> |
| 6. Plain prinia | <i>Prinia subflava</i> |

Family : Timaliinae

- | | |
|----------------------------------|-----------------------------|
| 1. Orange-headed ground thrush | <i>Zoothera citrina</i> |
| 2. Blue rock thrush | <i>Monticola solitarius</i> |
| 3. Whistling thrush | <i>Myophonus caeruleus</i> |
| 4. White-crested laughing thrush | <i>Garrulax leucolophus</i> |
| 5. Black-throated thrush | <i>Turdus ruficollis</i> |

Family : Nectariniidae

- | | |
|-----------------------------|----------------------------|
| 1. Purple sunbird | <i>Nectarinia asiatica</i> |
| 2. Scarlet-breasted sunbird | <i>Aethopyga siparaja</i> |

Family : Ploceidae

- | | |
|-----------------------|----------------------------|
| 1. House sparrow | <i>Passer domesticus</i> |
| 2. Black-headed munia | <i>Lonchura malacca</i> |
| 3. Tree sparrow | <i>Passer montanus</i> |
| 4. Spotted munia | <i>Lonchura punctulata</i> |
| 5. Sharp-tailed munia | <i>Lonchura striata</i> |

Family : Emberizidae

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|--------------------|-------------------------|
| 1. Crested bunting | <i>Melophus lathami</i> |
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Family : Dicaeidae

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|---------------------------------|-------------------------|
| 1. Plain-coloured flower pecker | <i>Dicaeum concolor</i> |
|---------------------------------|-------------------------|

Family : Paridae

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|-------------|--------------------|
| 1. Grey tit | <i>Parus major</i> |
|-------------|--------------------|

Family : Motacillidae

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|---------------------------|-------------------------------|
| 1. Paddy field pipit | <i>Anthus novaeseelandiae</i> |
| 2. Beautiful niltava | <i>Muscicapa sundara</i> |
| 3. Grey-winged black bird | <i>Turdus boulboul</i> |

Family : Turdinae

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|------------------------|---------------------------|
| 1. Eurasian rubythroat | <i>Erithacus calliope</i> |
|------------------------|---------------------------|

Family : Timaliinae

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|----------------------------------|---------------------------------|
| 1. Jungle babbler | <i>Turdoides striatus</i> |
| 2. Slaty-headed scimitar babbler | <i>Pomatorhinus schisticeps</i> |
| 3. Striated babbler | <i>Turdoides earlei</i> |

Family : Campephagidae

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|--------------------|------------------------------|
| 1. Scarlet minivet | <i>Pericrocotus flammeus</i> |
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Family : Sittidae

- | | |
|-----------------|---------------------------|
| 1. Wall creeper | <i>Tichodroma muraria</i> |
|-----------------|---------------------------|

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New Record of Bengal Florican in Burachapori Reserved Forest, Assam

BIBHAB KUMAR TALUKDAR, Animal Ecology & Wildlife Biology Laboratory, Department of Zoology, Gauhati University, Guwahati 781 014, Assam

The Bengal florican *Eupodotis bengalensis*, one of the most endangered species, has been recorded in Burachapori Reserved Forest of Assam on 26th May 1995. The Burachapori Reserved Forest (RF) is situated adjacent to the Lakhowa Wildlife Sanctuary of Assam. The Burachapori RF, has an area of around 444 sq km, in the south of river Brahmaputra, and is under the control of the Western Assam Wildlife Division, Tezpur and in the civil district of Sonitpur. I have been encouraged by Mr R.K. Das, the DFO for Western Assam Wildlife Division, to carry out a pilot survey in Burachapori RF to find out the presence of the Bengal Florican.

The Burachapori RF is composed of around 20% forest, 65% grasslands and rest are waterbodies and scrubs. At around 1.10 p.m. on 26th May 1995, I saw a bird fly from the grasslands. I used my 8 x 40 Binocular and recognised the Bengal florican (female), the bird I was looking for. I saw the bird landing in the grassland near Samla Dubi in the South Jhaoni area of the RF at around 1.14 p.m. I watched the female Bengal florican, joining the male in the grassland. I

went close to the bird, but as soon as I reached around 100 metre near the bird, both male and female Bengal florican flew from the grassland area at 1.20 p.m. Five slide photographs have been taken in flight. The male Bengal florican shows distinct white patches on its upper wings during flight. The bird flew for one minute and then landed again in the grassland area. As the breeding season of Bengal florican is going on, I feel that the Bengal florican have some nests and laid eggs inside the Burachapori RF.

Keeping in mind the sensitivity of the bird during the breeding season, I did not disturb the birds any more, as my primary intention was to ascertain the existence of Bengal florican in the Burachapori RF, which I did with confirmed sightings and photographic proofs. The present record of Bengal florican in Burachapori RF indicates the quality of grassland habitat of the reserve forest. The Burachapori RF may be declared as a Wildlife Sanctuary to give stringent protection to the endangered Bengal florican for future conservation.

Correspondence

RECENT CHANGES IN MIGRATORY HABITS OF SOME BIRDS. ASHA CHANDOLA SAKLANI, Box No. 45, Srinagar, Garwal

This has reference to Sri Himmath Singhji's note on some interesting bird occurrences in Kutch (NLBW 34: 115-116). I find his observation on the occurrence or extension of ranges of the varicus birds concerned extremely interesting. And I absolutely agree with him — 'it is only through sustained exchange of information and search that final conclusions could be reached about the status and distribution of at least some of the birds which are seen more often at the present time' than earlier. This is an area OSI proposes to address in future with the help of a network of bird-enthusiasts.

This brings to my mind an example of how regular vigilance and exchange of information among ornithologists in European countries lead to accumulation of enormous data shedding light on the changes in the migratory habits of some birds over the past century. According to Peter Berthold in some European populations these alterations appear to have been initiated quite recently and can be summarised in five main categories (A-E) (J. Orn. 1994, 135:394). **A. Reduction of migratoriness.** For example the European blackbird *Turdus merula* was an exclusively migratory species in central Europe until the beginning of the 19th century and then became a partial migrant. Some other European short distance and partial migrants like the black redstart *Phoenicurus ochruros*, chifchaff *Phylloscopus collybita* or goldfinch *Carduelis carduelis* show similar reduction in migratoriness. **B. Extension of migratoriness.** For example during the expansion from the Mediterranean area to central Europe the immigrant populations of serin (a finch) *Serinus serinus* became increasingly migratory in

contrast to the largely resident parent population. **C. Changes of migration times.** Many short and long-distance migrants show tendency to leave their breeding areas in autumn later and in part also to return in spring earlier. **D. Changes in migratory distance.** Some populations of greylag goose *Anser anser* show increasing trends to winter closer to their breeding areas. **E. Novel migratory directions and winter quarters.** The blackcap *Sylvia atricapilla* has extended its wintering areas by shifting the migratory direction. Birds from central Europe, which had migrated in southerly directions to the Mediterranean area and Africa developed a novel northwestern migratory direction over the past 30 years. The new winter quarter is on the British Isles. Perhaps the changes in the ecological conditions on the British Isles stimulated the microevolutionary process involved in these novel migratory habits.

I dream of the day when documentations from and liaison among ornithologists of the Indian subcontinent will develop the scenario of adaptability of avian migration through microevolution.



WREN-BABBLER IN GOA UNIVERSITY LIST, AND NOTES ON BIRDS OF THE ARABIAN DESERT, CHECK-LIST OF KDHIANA BIJOLAI, AND BIRDS FEEDING ON CHAPATI CRUMBS. LAVKUMAR KHACHAR, 646, Vastunirman, Gandhinagar 382 022

May I draw your attention to Newsletter Vol.35, No.1, Jan-Feb 1995 page 2. Surely, there seems to be some error in identification with the inclusion of a Wren-Babbler *Spelaornis* sp. in the Goa University list.

The synopsis lists six species of Wren-Babblers in our region and for the interest of our readers I list them with their ranges as given by Ripley :

1. *Spelaornis caudatus* : Tailed Wren-Babbler. Nepal, Sikkim, Darjeeling, Bhutan and Kameng district of Arunachal Pradesh, 6000' to 10,000'.
2. *S. badeigularis* : Mishmi Wren. One specimen collected in Arunachal Pradesh.
3. *S. longicaudatus* : Longtailed Wren-Babbler. Rare, hills of Meghalaya and Manipur. Also collected in eastern Nepal (!) so possibly extends along the Eastern Himalayas.
4. *S. chocolatinus* : Streaked Longtailed Wren-Babbler. Arunachal Pradesh, Meghalaya and the hill ranges on the Burmese border.
5. *S. troglodytoides* : Longtailed Spotted Wren-Babbler. Eastern Bhutan and into China and north Burma.
6. *S. formosus* : Spotted Wren-Babbler. Sikkim, Bhutan, Arunachal Pradesh, Meghalaya, Manipur and Nagaland.

In addition, there are the following genera of very confusingly similar appearances.

Trichastoma with two species
Rimator malacoptilus
Napothera with two species
Pnoepyga with two species
Sphenocichla humei and
Troglodytes troglodytes Wren.



All the above are from N.E. India with the Wren extending westwards along the Himalayan ranges to Afghanistan.

The seventh genus *Pellorneum* has two species the Marsh Spotted Babbler *P. palustre* again from the North East and the Spotted Babbler *P. ruficeps* which is found across "most of the subcontinent". Perhaps then, the bird from Goa is this species which is fairly common in forests of the Ghats.

I wonder if the attention of readers is directed to the birdnames listed by Aasheesh Pittie and Robertson or if it could be serialised in the Newsletter as an insertion.

Birding in the Arabian Desert

Reference to Yahya's "Birding in the Arabian Desert". Often I wonder whether it is not necessary for ornithologists to do a little more research before listing birds because the black eagle *Ictinaetus malayensis* in NW Arabia should deserve a special note as would say one sitting on the tree next to my house in Gandhinagar would. Gandhinagar incidentally is very much closer to the black eagle's range than Arabia is.

Perhaps Yahya noted 'a black eagle' and not 'the black eagle'. Birds of prey are notorious in having dark phases and very light ones adding to the general confusion which raptor identification is. Greater spotted eagle *Aquila clanga* and imperial eagle *A. heliaca* have very dark specimens. Dr Yahya may like to comment.

Check-list of the Birds of Kalliana-Bijolai

Going through the check-list of birds of the Kalliana-Bijolai area some 8 km west of Jodhpur I was surprised to find the following winter visitors listed as RM (Resident with migratory populations).

White-eyed pochard	<i>Aythya nyroca</i>
Kestrel	<i>Falco tinnunculus</i>
Redshank	<i>Tringa totanus</i>
Common sandpiper	<i>T. hypoleucos</i>
Blue throat	<i>Erithacus svecicus</i>
Black redstart	<i>Phoenicurus ochrurus</i>
Desert wheatear	<i>Oenanthe desertii</i>
White wagtail	<i>Motacilla alba</i>
Rock bunting	<i>Emberiza cia</i>

To top it all, the pied chat *Oenanthe picata* is listed as resident (R)!

It may be noted that individuals of purely winter visiting species may stay on as non breeding juveniles or first year adults, and if the bird is unfit to undertake the migratory journey. Only those species which nest with us would fall in the category of resident species.

Incidentally the striolated bunting *Emberiza striolata* of NW India has been frequently confused and identified as the

wintering rock bunting. To conclude, surely ashycrowned finch-larks *Eremopterix grisea* are resident!

Birds Feeding on Chapati Crumbs

I have just been browsing through letters to the Editor in the Newsletter for Birdwatchers, Vol. 35, No.1, Jan-Feb 1995 and was pleased to read Thomas Gay's letter — after a great lapse — on birds feeding on chapati crumbs.

At Gandhinagar, I have a lively assembly of birds feeding on fruit and crumbs and I have found normally insectivorous birds feeding on chapati crumbs. Unfortunately I do not have wagtails visiting here, but apart from the regular bulbuls, common and Brahminy mynas, common babblers, jungle babblers, occasional flocks of large grey babblers there are several insectivorous birds as well. Indian robins were the first to start eating the crumbs which are now regularly and avidly fed on. Next to follow were the resident pair of ashy wren warblers and the last to join in were the tailor birds.

A pair of coucals regularly visit the table and very soon I expect a couple of koels and a sirkeer cuckoo.

This summer a pair of dhayal have moved onto our premises and have become regular habitues. During March, rare coloured starlings drop in from the squabbling avian feasting on the coral blossoms nearby.

I have observed how Indian robins have taken to eating "chapati" crumbs — they are very fond of ants and ants frequently come to carry the crumbs. The warblers and tailor birds (and presumably Mr Gay's wagtails) have picked up such ants in the mistaken belief — i.e. if birds can believe — that the ants were transporting their eggs and larvae.



USEFUL ADVISE TO THE EDITOR. AASHEESH PITTIE, 8-2-545, "Prem Parvat", Road No.7, Banjara Hills, Hyderabad 500 034

I have just received a copy of the new Newsletter. Let me congratulate you and Sridhar on its content and quality.

I have a comment and a clarification.

The former is regarding your 'Editorial' and the idea to compress 'long' articles. I suggest that after a piece is edited thus, it should be sent to the author for his/her approval. It is a good 'professional' practice which ensures the satisfaction of both parties.

The latter is regarding Thomas Gay's letter (p.20) under 'Correspondence'. Which place is he talking about? This is strictly for personal 'indexing' purposes. Is it Pune? (The guess is based on earlier notes by him, written from Pune!). Kindly let me know so that the indexing is done properly.

I am also really glad to see that at least one of the papers in Newsletter (pps. 2-5) has used the revised taxonomic order and, more importantly, the new scientific names extant today, as published in the OSI's Nomenclature booklet. Perhaps more in the future!



ATTACK ON A WHITE EYE NEST. SAMEER S. SAHASRABUDHE, Life Research Foundation, 10, Pranav Society, 1000/6-C Navi Peth, Pune 411 030

It was the month of August and I would regularly see a pair of white eyes carrying nesting material to build their nest on an Indian coral tree (*Erythrina indica*) in front of my house. On the 20th of August at about 3.00 p.m. I heard the white eye giving alarm calls. I opened the window to see a male koel lurking near the white eye's half built nest. The koel was gradually descending towards the nest from a nearby branch, when a redvented bulbul and an ashy wren warbler joined the scene. The bulbul and the ashy wren warbler attacked the koel repeatedly; especially the bulbul attacked fiercely. The white eye was never seen attacking the koel, but kept on giving alarm calls. Neglecting the attacks the koel descended and came at a position from where he could see whether there were eggs in the nest. Since the nest was half-built there were no eggs in the nest. The koel, surprisingly, pierced the nest with his beak destroying it completely. The bulbul and ashy wren warbler kept on attacking it throughout this period. The bulbul dived and pecked at the shoulders of the koel repeatedly. Finally after about 20 min the koel flew away.

Were the white-eye, red-vented bulbul and ashy wren warbler members of a mixed hunting party and if so, do the members protect the nests of other members? Why did the white-eye not attack the koel? I had noticed bulbul and ashy wren-warbler nests in the nearby area last year but they had not nested this time. The bulbuls nested one and a half month later on a nearby guava tree. The white-eye pair had left the nest site and no other nest could be located during the season. Why should a nest parasite or a nest robber be interested in destroying a nest?



A NESTING RECORD OF PHEASANT-TAILED JACANA FROM KUTCH. JUGAL KISHORE TIWARI, PO Moti-Viran, Nakhtrana, Kutch

Like in other parts of India in Kutch also the pheasant-tailed jacana (*Hydrophasianus chirurgus*) is resident, but moves locally with monsoon conditions (Ali, 1945, The Birds of Kutch). Till last year no one had recorded its breeding activities. However, Shri Himmatsinhji who is a senior ornithologist of Kutch has seen juveniles and fully fledged young of this species on a few occasions, particularly on Devisar tank and Dhonsa jheel.

On August 20, 1992 I observed six pairs of *H. chirurgus* displaying at a distance in a large water body near Chhari dhandh, a shallow lagoon. The display area was full of blossoming lilies. The depth of water varied from 2 to 4 feet. The displaying birds were emitting their normal *tewn, tewn* calls. I visited the place again a week later on August 27 accompanied by the local BNHS Assistant, Mr Muhammad, and found two nests. One of the nests contained 4 peg-top shaped eggs which were coffee coloured, while the second

one was under construction. The fully completed nest was made up of stems and leaves of reeds and looked like a floating raft in about 3½ feet of water. This is the first observation of the pheasant-tailed jacana's breeding display along with its nest and eggs in Kutch.



PIED HARRIER IN NALSAROVAR, GUJARAT. DILHAS JAFFRI, Tanvir Manzil, Dholka 387 810, Dist Ahmedabad, Gujarat

My trip to Nalsarovar, in October '84 was a rewarding experience. I began scanning the skies with my Nikon camera fixed with a telephoto lens (300 mm), I saw a bird of prey gliding overhead. I snapped it and comparing it with the illustrations in the book I had no hesitation in identifying it as a pied harrier (*Circus melanoleucos*). I showed the photograph to Lavkumar Khachar who told me that it is an eastern bird and its occurrence in Gujarat was a rare phenomenon.



FEATHER COLLECTION FROM A RAPTOR'S NEST, AND A NOTE ON THE ADJUTANT STORK. HILLALJYOTI SINGHA, C/o Late Dr B Hazarika, N.C.C. Mess, Poly Road, Pani Gaon, PO Nagaon 782 001, Assam

On 15th Feb 1995, I visited Dangarkuchi, 4 km from district H.O. town Barpeta in Assam. I found a pariah kite (*Milvus migrans*) nest on a 'Bhelkora' tree (*Trewia nudiflora*) just behind a house. The tree was C 17 m in height and the nest was placed at the height of C 12 m in a 'Y' junction of two branches. The house owner reported that nesting has been continued for 4 years and they witnessed parents bring kitten, pigeon, chicken, to the nestlings. I could not see the nestlings, but I heard their calls. One interesting incident I saw — when the parents left the nest for a while, one pair of grey headed myna (*Stumus malabaricus*) came to the nest. The nestlings were calling but the pair stole some feathers from the nest and left. Why they carried feathers is not known to me; as grey headed myna nest generally in tree stem hole with collection of twigs, rootlets and grass (Ali, and Ripley, 1983). Moreover, their overall breeding season is April to July; though it may vary locally.

References

Ali and Ripley, 1983. Compact Handbook of the Birds of India and Pakistan, Second Edn.

Greater Adjutant Stork Feeding on Duck.

Panidihiing (27.10° N, 94.40° E) is a proposed bird sanctuary c 144 km from the district HO town of Sibsagar district. It is situated near the river Brahmaputra on the south bank and Dichang river, a tributary of Brahmaputra also passes by it. The vast area (10 x 8 sq km) is a grassland flooded every summer and comprises some small beels and rivulets (see Barooh, D., 1990).

On 19th January, 1995, I visited Panidihiing with my assistant Dwipendra Narayan Dev and Mamud Ali, a forest guard. We walked continuously for seven hours. At around 2.00 p.m. I saw a gathering of nine greater adjutant stork (*Leptoptilos dubius*) in two small parties foraging in a deep marshy area from distance of 200 meters. Suddenly I saw one big greater adjutant catch a migratory duck (there were no domestic ducks) and immediately 4 greater adjutant followed it. I, however, was not sure whether it was a live or a dead duck. The adjutant was trying to swallow it and other adjutants were trying to snatch the prey away. Once the duck fell down from its bill into the water and again it was picked up by the adjutant. After a 10 minutes battle it could swallow the duck. Unfortunately we could not go near due to lack of a boat. I wonder why that adjutant had chosen such food; because in other sites adjutants were foraging along with herons, egrets, cormorants, geese and ducks, and they were not afraid of adjutants. I heard one adjutant caught a house crow in a garbage centre (Bhaattacharjee, pers. com.), but I never heard or saw greater adjutant storks prey upon migratory duck.

References

Barooh, D. 1990. Newsletter for Birdwatchers. Panidihiing Reserve Forest, Status and its Avifauna, Vol. XXX, No.5&6, May-June 1990.



BIRDS OF MURADPUR, DISTRICT RAJOURI, JAMMU & KASHMIR. MAHARAJKER SINGH ISHAR, W-1, Jawahar Nagar, Rajouri 185 132 (J&K)

Muradpur (74°-19'E, 33°-19'N) lies 7 km from Rajouri Town on Poonch-Jammu border road highway. This beautiful village is situated on the right bank of Rajouri Tawi (a tributary of river Chanab) at an altitude of 3024 feet in the foot hills of Pir Panjal Mountain Range and occupies the geographical area of 16 sq km.



Muradpur village, Rajouri (J & K State)

The climatic condition of village experiences hot and dry during summer and cold in winter.

There are chir pine forests, forests of broad leaved trees, deciduous and non-deciduous, scrub forests, and agricultural fields.

The average rainfall in summer (June to September) is 991 mm and in winter (October to May) is 653 mm.

The village life in Muradpur has its own charms with a grove of trees, a clear and silvery flowing stream and refreshing panorama. Nature chose Muradpur to be the show-window of its beauties. It is extremely rich in bird life and many interesting forest species.

This is the most popular area for bird-watching around Rajouri town.

As an amateur bird-watcher and nature lover, I spent some time in this village. I made a list of some 62 species of birds identified by me during the spring season (March-April) of this year 1995.

Acknowledgement

I thank Mr Tahir A Shawal for his help in providing me a reference book of Birds.

Reference Book

Martin W Woodcock (1986), Collins Handguide to the Birds of Indian Sub-continent, Collins, London.

Bird Species seen during Spring Season 1995,
Muradpur

Sl. No	Name	Scientific Name
1	Hoopoe	<i>Upupa epops</i>
2	Koel	<i>Eudynamis scolopacea</i>
3	Spotted dove	<i>Streptopelia chinensis</i>
4	Coot	<i>Fulica atra</i>
5	White breasted kingfisher	<i>Halcyon smyrnensis</i>
6	Collared dove	<i>Streptopelia decaocto</i>
7	Mahratta woodpecker	<i>Dendrocopos mahrattensis</i>
8	Indian roller, Kashmir roller	<i>Coracias benghalensis</i>
9	House swift	<i>Apus affinis</i>
10	Jungle myna	<i>Acridotheres fuscus</i>
11	Common babbler	<i>Turdoides caudatus</i>
12	Paradise flycatcher	<i>Terpsiphone paradisi</i>
13	White spotted fantail	<i>R. albicollis</i>
14	Black partridge	<i>Francolinus francolinus</i>
15	Crested hawk-eagle	<i>Spizaetus cirrhatus</i>
16	Shikra (Hawks)	<i>Accipiter badius</i>
17	Scavenger vulture	<i>Neophron percnopterus</i>
18	Whitte-backed vulture	<i>Gypaetus barbatus</i>
19	Common myna	<i>Acridotheres tristis</i>
20	Jungle babbler	<i>T. striatus</i>
21	Large-grey babbler	<i>T. malcolmi</i>
22	Indian robin	<i>Saxicoloides fulicata</i>
23	White browed fantail	<i>Rhipidura aureola</i>

24	Magpie robin	<i>C. saularis</i>
25	Rose-ringed parakeet	<i>Psittacula krameri</i>
26	Little egret	<i>Egretta garzetta</i>
27	Cattle egret	<i>Bubulcus ibis</i>
28	Pond heron	<i>Ardeola grayii grayii</i>
29	Large egret	<i>Egretta alba</i>
30	Crested hawk eagle	<i>Spizaetus cirrhatus cirrhatus</i>
31	Large pied wagtail	<i>M. maderaspatensis</i>
32	Indian tree pie	<i>Dendrocitta vagabunda</i>
33	House sparrow	<i>Passer domesticus</i>
34	Jungle crow	<i>Corvus macrohynchos</i>
35	Red vented bulbul	<i>Pycnonotus cafer</i>
36	White cheeked bulbul	<i>P. leucogenys</i>
37	Grey headed flycatcher	<i>Culicicapa ceylonensis</i>
38	Red-wattled lapwing	<i>Vanellus indicus</i>
39	Paddy bird	<i>Ardeola grayii</i>
40	Indian white eye	<i>Zosterops palpebrosa</i>
41	Golden oriole	<i>O. oriolus</i>
42	Himalayan greenfinch	<i>Carduelis spinoides</i>
43	White breasted vulture	<i>Gyps bengalensis</i>
44	Red junglefowl	<i>Gallus gallus</i>
45	Peafowl	<i>Pavo cristatus</i>
46	Grey partridge	<i>F. pondicerianus</i>
47	Jungle bush quail	<i>Perdica asiatica</i>
48	Moorhen	<i>Gallinula chloropus</i>
49	Spotted owlet	<i>Athene brama</i>
50	Pied kingfisher	<i>Ceryle rudis</i>
51	Large cuckoo shrike	<i>Coracina novaehollandiae</i>
52	Whistling thrush	<i>Myiophoneus caeruleus</i>
53	Blue rock thrush	<i>Monticola solitarius</i>
54	Rufous backed shrike	<i>Lanius schach</i>
55	Tickell's flowerpecker	<i>Dicaeum erythrorhynchos</i>
56	Black drongo	<i>D. adsimilis</i>
57	Pariah kite	<i>Milvus migrans</i>
58	Large pied wagtail	<i>Motacilla maderaspatensis</i>
59	Purple sunbird	<i>Nectarinia asiatica</i>
60	Himalayan tree creeper	<i>Certhia himalayana</i>
61	Black winged kite	<i>Elanus caeruleus</i>

Note :- This is not a complete list of birds



NESTS OF BAYA USED AS FILLING FIBRE IN SOUTHERN RAJASTHAN. SATISH KUMAR SHARMA, Range Forest Officer, Aravalli Afforestation Project, Jhadol (F.) Dist. Udaipur (Rajasthan) 313 702

During my field visits to forest areas of Kotra Tehsil of Udaipur district, in southern Rajasthan, I noticed a few tribals using deserted nests of baya (*Ploceus philippinus*) as fibres for preparing pillows for domestic use. These 'nest fibres' are cheap and easily available.

Halt built nests are also used for sieving sugarcane juice and buttermilk. Before use the nests are washed and then used as a strainer.



BIRDWATCHERS ARE WELCOME TO THE KANHA TIGER RESERVE. *RAVISHANKER KANOJE, Forest Ranger AT and Post Mukki via Baihar 481 111, Dist. Balaghat (MP)*

I welcome readers of the Newsletter for Birdwatchers in the Kanha Tiger Reserve. Kanha's bird life is rich. Of the 77 families of Indian birds 52 families consisting of 225 species have been recorded from Kanha National park. In fact the Kanha Tiger Reserve possibly harbours a far greater number of bird species.

The best bird watching sites in the park are Kanha anicut, Sarvanfal, Bisanpura sondhor group of tanks and its meadows. In the Buffer zone a trek along the Banjar river, Samnapur, Basinkhar, Balgaon irrigation tanks and nearby forests are highly rewarding.

Accommodation and journey by jeep could be arranged if information is received well in time.



Book Review

FINE BIRD BOOKS. Reviewed By *KUMAR GHORPADE, 1861, Bethel Street, St. Thomas Town, Bangalore 560 084*

On one of my bookshop rounds I came across a book at Gangarams I found very interesting in regard to information about bird illustrations, especially paintings of yore. At the price quoted it was out of my own budget but perhaps you would like to include the following information in the NLBW for your readers?

FINE BIRD BOOKS 1700-1900, by S. Sitwell, H. Buchanan and J. Fisher. Foreword by Sidney Dillon Ripley. Published by Atlantic Monthly Press, New York at Rs. 800/- ISBN 0-87113-285-0 xi+180 pages, 52 plates (1990)

The book has full page coloured illustrations of paintings by many early artists as well as a list of bird books with illustrations that were published in the 200 years from 1700-1900. Buchanan was the bibliophile who teamed up with James Fisher the ornithologist to fashion this wonderful "collector's item". There are many Audubon paintings included along with those of John Gould, A.J. Wolf and others. Perhaps this extract from the Introduction best defines the book's contents:

"The scope of this book is the period from about 1700 to 1900 or a little earlier, and its aim is to show a selection of the best illustrations from old natural history books with coloured plates, together with an account of these books and their creators, which represent what might be called the golden age of the natural history book."

BIRDS OF THE HILL REGION OF KARNATAKA: AN INTRODUCTION. *A.K. CHAKRAVARTHY and K.P. PURNA CHANDRA TEJASVI, Navbharath Enterprises, 1992. Reviewed by ABDUL JAMIL URFI*

In February this year, while on my way to attend the 'Asian Birds Red Data Book Workshop' at Coimbatore, a journalist friend from Delhi and I, made a short birding trip to Coorg district. But on the day we spent at Marcara, we saw very few birds. Either the day was too hot, or we just didn't reach the right spots or we were too preoccupied with the thought that we were in a region from where our very own beauty queen, Miss World Aishwarya Rai hails. Anyway, on the day in question, we could only see about 40 species in 3 hours of afternoon birding. Among some exciting spottings were: storkbilled kingfisher, blackheaded cuckoo-shrike; tickell's blue flycatcher, goldenbacked woodpecker and surprisingly large numbers of redvented bulbuls. It turns out, however, that Coorg and other hill districts of Karnataka are very rich in birdlife. According to A.K. Chakravathy and K.P. Purna Chandra Tejasvi, 294 species of birds have been recorded from here. Their book entitled, 'Birds of the Hill Region of Karnataka' is the subject of the present review.

During the last decade several publications on birds from specific areas of the country have appeared and this book is one such project. In the post Salim Ali phase of Indian Ornithology it is an important contribution in the sense that it adds to our understanding of bird distributions in the Indian subcontinent. The authors have based their book on field surveys they did, first intermittently during 1972-82 and later in an organised manner during 1983-86. All through, they display a good understanding of the study area and its birds. Since many references on hill birds of Karnataka are cited, it shows that the authors have also endeavoured to put their work in a proper (historical) perspective. The end result is a sleek book with a nice get up and much useful information.

In their introduction the authors describe their study area. This is followed by their main work i.e. the descriptions of the 294 species of birds. A highlight of this section is the usage of 'thumb tabs' for the main groups of birds, based on the Collins Bird Guide. This feature certainly adds to the usefulness of the book as a handy field guide. For each species a brief description to facilitate field identification is given, followed by comments on habits and habitat. However, in many cases the bird descriptions are too short - almost as short as the moment for which you actually see a small bird as it flits from branch to branch and disappears in the depths of the forest. Perhaps, in future editions the authors may wish to expand on the bird descriptions and also give an indication of bird size by, say, comparisons with familiar forms. Finally, an index of scientific or English names or both, which is presently missing, will add to the overall usefulness of this book.

In the 3rd chapter entitled, 'Results of the Survey' the authors have analysed their data with respect to taxon abundances, seasonal variations in bird species and some aspects of habitat selection. Since coffee, betelnut and other

plantations constitute an important element of the landscape, the authors could also have discussed the general implications of some ecological studies in Uttar-Kanara by other workers, about bird communities in these artificial habitats. There is also a mention of the important birding areas in Malnad. In the section pertaining to 'tips for birdwatchers', there are two instances - one about personal safety and the other about collecting specimens for identification which are quite interesting. I reproduce this below :

"Birding in the forest areas ... may prove dangerous at times. Wild animals may be on you. If single, it is desirable to pally-up with a localite well versed with forest life and carry a rifle".

"An amateur often finds it difficult to even focus on smaller birds feeding actively in high/dense canopy trees, especially if the terrain, at base is sloping. Such birds, often can be identified, only in hand. *An air rifle becomes handy for such situations.*" (emphasis mine).

I find both the points valid, although to a limited extent. However, many conservationists will object to the gun being given such a free sanction and label this otherwise clean book as blasphemous.

There are several colour pictures of birds in the book. Many of them are of top-class quality and some have already appeared on the cover of the *Newsletter*. However, the criteria for selecting the theme of the pictures is not clear. If their purpose is illustration to facilitate identification (i.e. complementary to the text) then there should have been more pictures, especially of the difficult to identify birds.

Overall, I feel that the authors have done a good job, for which they need to be congratulated. The price of the book is not mentioned anywhere. If the producers of this book decide to fix a price I hope it will be affordable. Not everyone will be lucky - like I was - to get a free complimentary copy.



BIRDS AND TREES OF TOLLY, by KUSHAL MOOKHERJEE Illustrated by Dipankar Ghose & S.K. Chanda (Published by the Tollygunge Club Ltd.) PP. 126 Rs. 300/-. Reviewed by Laeeq Futehally.

Last year saw the publication of the *Birds of Rishi Valley*: This year we have the *Birds and Trees of Tolly*. The

century-old Tollygunge Club has a hundred acres of land which, with careful nursing has now become, like the Rishi Valley Estate a sanctuary for birds, mammals and trees. This small but beautifully produced book describes the natural treasures of the Club in words and coloured pictures.

Each double-page shows one tree and one animal. The flowers and fruit of the tree are featured in close-ups, while the overall look of the tree, and its position on the estate, are carefully described, making it easy for anyone to find it.

The bird pictures are excellent, whether they are photographs or, as in many cases, paintings by D. Ghose. It is in some of the sketches that one is a bit puzzled. For instance, we are accustomed to see a flowering Flame of the Forest tree which is all flower and no leaf. Here the tree is represented as a dense pyramidal shape of equal leaf and flower (p. 16). Some of the other sketches too, do not show very typical members of the species - for example, the casuarina (p. 26), *Polyalthia longifolia* (p. 74) or the golden trumpet tree (p. 92). As for the photographs, the emphasis is obviously on showing the location of the tree in the club grounds rather than help in the identification. To that extent the book is meant for Members Only. For surely the Club would not welcome non-members who tramp about trying to locate its precious trees!

As a postscript, we must grant that such a publication must be the best way of celebrating the hundredth birthday of any institution.

OBITUARY

We regret to announce the death of Mrs. JAMAL ARA, in Ranchi a couple of months ago. For many years she was the Resident Editor of the *Statesman* in Ranchi. Her main interest was in Ornithology, as is evident from her many articles in the *Newsletter*. She was throughout her life a keen conservationist and was particularly interested in the preservation of the natural forests of Bihar.

May her soul rest in peace

Continued from front inside cover

Anatidae 2000.....

- In addition, populations of conservation concern were identified using the criteria recently developed under the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) under the Bonn Convention. Lists of populations fulfilling these criteria were agreed. According to this numerical classification, 32% of the world's Anatidae populations are estimated to number less than 25,000 individuals, and 62% to number less than 1,00,000 individuals. Of the 287 biogeographic populations for which trend data exist 34% are declining.
- Endemic species and populations were identified as being a high priority for conservation concern. Regions with high concentrations of endemics (eg. Madagascar) must be the first to implement conservation actions.
- Many exotic Anatidae species have become established as a result of escapes from collections, and deliberate introductions. These exotics threaten, through competition and hybridization, 32% of the globally threatened Anatidae taxa.

Recommendations

- Biogeographic populations should be taken as the appropriate units for conservation and management purposes, taking into account the biological principles whenever possible. Further detailed research should be carried out to clarify the delimitation of the biogeographic populations.
- Surveys and research should be carried out in regions where information is poor or lacking, in order to evaluate the present conservation status of all taxa. Serious gaps in baseline monitoring activities should be filled, and more emphasis should be paid to the Southern Hemisphere.
- Keeping in view the success of the International Waterfowl Census as a means of monitoring waterfowl distributions and populations across the region, complementary monitoring methods should be extended to periods of northward and southward migration to identify a complete network of important sites for Anatidae.
- Monitoring of Anatidae needs to occur at local, national and international levels. Different levels of detail will be required at each level, but it is essential that the methods used are standardized and well coordinated between sites and countries, and that the results are well communicated to allow appropriate regional and temporal comparisons.
- Globally threatened species (based on the IUCN criteria) should be considered as the highest priority for conservation action.
- More emphasis should be paid to endemic species and populations.

MIGRATION

Conclusion

- Fifty-five percent of the world's 410 populations of Anatidae are predictable seasonal migrants, with a further 24% being largely sedentary and 1% of unknown migratory status. The remaining populations (20%) include partial migrants and the so-called "rains" migrants. Of particular note is that almost 70% of the globally threatened Anatidae taxa are sedentary (as well as the seven taxa that have recently gone extinct).
- Many Anatidae migrate over long distances (up to several thousands of kilometers) to complete their annual cycle; these migrations can last over several months.
- Migration is energetically expensive, and requires the gathering and storage of substantial fuel reserves; these must be replenished at appropriately located staging areas if the reserves are not adequate to complete the migration in one flight.
- The high energetic cost of migration can lead to high mortality on migration and major impacts on breeding success if female body condition has been reduced. This period, particularly the pre-breeding migration (and preparations for it) is likely to be a crucial "bottleneck" for migratory Anatidae populations when fuel reserves must be built-up and replenished at appropriately located staging areas. Since the female arctic breeding geese and swans must arrive on their breeding areas carrying most of their reserves for egg-laying and incubation, their fuelling and refuelling sites are of critical importance. Spring staging areas are less critical "bottlenecks" for ducks than they are for geese and swans. The critical "bottlenecks" for ducks need to be identified and their relative importance assessed.

- Migratory pathways are determined by the availability of wetlands in key areas between the breeding grounds and the non-breeding areas, and by the energetic needs and capability (flight potential) of individuals of the species concerned.
- In the Africa/Eurasia region, the most urgent conservation problems may not be with migratory species, but with sedentary species in Africa.

Recommendations

- The knowledge of Anatidae migrations should be improved by increasing international cooperation among ringing schemes and analysis of existing recovery data, by an efficient use of the latest technologies (eg. satellite tracking), and by focusing on priority taxa to be studied (eg. *Anser erythropus*, *Anser indicus*, *Anser fabalis*, *Anser albifrons* and *Anas gibberifrons*). As satellite tracking cannot yet be applied for ducks, other techniques must be investigated for monitoring their migration.
- An improved cooperation in relation to flyway studies (eg. migratory routes, networks of key sites along flyways) should be established within the major flyway regions of the Americas, Africa/Eurasia and Asia/Pacific.
- Tropical Anatidae species must become the primary objective of more research in order to understand migrant and resident species, their critical habitats, population sizes, migrations and movements (eg. in the Caribbean and Afrotropical regions).
- Non-migratory Anatidae, especially threatened populations, should receive more attention in relation to basic ecological research and conservation efforts in general.

HABITAT REQUIREMENTS

Conclusions

- The availability of appropriate wetland habitat is the primary factor affecting the distribution and abundance of most Anatidae populations. The high productivity of wetland ecosystems is reflected in the large concentrations of Anatidae that often occur on them. Site protection and habitat management measures are important tools for conserving Anatidae populations.
- Several studies have revealed that optimal wetland habitats are filled preferentially, with density dependent competition forcing the less fit individuals to occupy less optimal habitats. This "carrying capacity" of breeding, non-breeding or staging habitats and sites is an important determinant of population size and distribution.
- Wetland habitats have suffered significant losses in recent decades, and continue to be degraded, particularly in arid and semi-arid regions. Conversion of wetland habitat, and therefore loss of carrying capacity, is probably the main negative factor affecting most Anatidae populations. This significant and continuing global loss and degradation of wetland habitats has affected 76% of globally threatened Anatidae taxa. Also, deforestation is a severe threat to species dependent on wet forests (eg. *Pteronetta hartlaubii*).
- Migratory Anatidae require networks of sites to complete their annual cycle. Loss or degradation of "bottleneck" sites (staging or moulting sites or sites which are important as drought or cold weather refuges) through which the majority of the population passes, may threaten an entire population. Research on the Western Palearctic population of *Cygnus*



columbianus bewickii could soon be used as a model for other species, in relation to its sites network throughout the annual cycle.

- Existing international legislation (eg. the Ramsar Convention) provides an adequate framework for protecting such site networks. However, coverage and implementation are so far inadequate in most countries. Site networks are extremely important, however they can only be as strong as their weakest link. It was noted that Ramsar site designations have so far been ineffective in the conservation of globally threatened Anatidae species.
- The carrying capacity of a site (or habitat) can be influenced by management (restoration, rehabilitation or enhancement), providing that the resource (or factor) being managed is limiting numbers at that site. Habitat management can also influence population size at flyway level, if it increases survival during "bottleneck" periods in the annual cycle. Population size at flyway level may therefore depend on management in a very small part of the flyway. Identification of these so called "bottleneck" sites is essential. Wetland restoration should, in first instance, be considered on habitats which can be recreated at reasonable cost and time scale.
- Specific management measures which focus on Anatidae, may result in negative impacts on other elements of wetland biodiversity and other wetland functions, and are inappropriate in developing countries where wetlands are considered more important for human survival. Integrated management, which maintains the natural functions of wetlands, will benefit both people and Anatidae. Integrated water management, and particularly maintenance of the natural variability and quantity of water in catchments and river systems, is crucial.
- When applied to wetlands, the principles of wise use recommended by the Ramsar Convention will benefit the Anatidae in the context of integrated wetland management. Social and economic tools particularly in relation to agricultural policies provide an important mechanism to promote the wise use of wetlands that are important for Anatidae in some industrialised countries.
- A lack of awareness about the needs for conservation of wetlands and Anatidae was recognised in many regions. Education of people living around wetlands is extremely important to ensure the sustainable use of wetland resources. Education should try to promote a feeling of "identity with" and "ownership" towards the wetlands. Threatened "flagship" species can also be used for awareness programmes and promoting appropriate management. This process requires a mechanism for identifying threatening processes at the site (eg. methods used in Australia may serve as a useful model) and identifying management techniques appropriate to respond to those threats.

Recommendations

- An atlas, identifying the flyways of each of the biogeographic populations should be prepared, and, where possible including the network of key sites used, with particular emphasis on the "bottleneck" sites throughout their annual cycle. This should be used as a basis for conservation action.
- More studies should focus on basic ecological research of Anatidae (eg. body condition, energetics and reproductive success) in order to understand the critical factors which affect the carrying capacity of sites (eg. habitat quality, food availability, disturbance) and the size of populations.

Modelling the impacts of habitat loss and hunting must become an objective of research.

- Particular attention must be given to surveys and identification of wetlands of high priority for conservation action. Vegetation mapping should be carried out to identify distribution patterns and to identify critical sites.
- The management undertaken on a site should be monitored carefully and evaluated, so that lessons can be learnt, in order to modify the approach and to apply it elsewhere.
- Critical sites for seabirds have been identified in certain international waters; a mechanism for protecting these areas should be developed.
- Communication and cooperation between authorities and experts at a local level should be improved for the conservation of wetlands. Awareness and education of wetland values and functions should be promoted on the level of local communities. Situations should be created so that it is in the interests of local people to use habitats in ways which sustain wildlife, particularly Anatidae.

MANAGEMENT OF HUMAN ACTIVITIES

Conclusions

Hunting

- Anatidae, particularly the migratory species, are a favoured quarry species for hunters in many parts of the world, taken for sport, subsistence and market hunting. A review of global hunting practices for waterbirds was presented at the conference by the IWRB Hunting Research Group.
- Many Anatidae populations have been hunted for centuries, showing that sustainable use of these populations is possible. However, non-sustainable hunting can lead to population declines, as occurred for some goose species in the Western Palearctic, and is perhaps the case now in the Eastern Palearctic.
- Hunting can impact Anatidae populations through direct mortality and wounding, disturbance and lead poisoning. Hunting during the pre-breeding migration, the breeding season and the moulting period is most likely to have direct negative effects on population size.

Other human activities

- Disturbance can have a similar effect to habitat loss, by reducing the carrying capacity of wetlands for Anatidae. Disturbance can result from high population pressure, many forms of recreation (particularly hunting, fishing, boating and windsurfing), helicopters/aircraft and critically located settlements (eg. in the Russian arctic river deltas). The management of such disturbance by creating disturbance-free zones in core wetland areas is a powerful tool to increase the numbers of Anatidae at site level. Experiments in Denmark suggest this may also lead to higher quality hunting opportunities. Disturbance caused by reed cutting could also be a serious problem in some regions (eg. in the eastern Mediterranean region, particularly Turkey, and Asia) and needs to be assessed.
- There exists a high subsistence catch of moulting and wintering ducks in Asia (eg. in Pakistan and China). There is a need to assess this activity for sustainability throughout the region in order to resolve potential problems.

Recommendations

- The principles of wise use must be applied to all hunting practices, which must be coordinated at flyway level, and the precautionary principle should be applied in all hunting management.
- More research should be carried out in order to better understand the impact of human activities on Anatidae populations as well as of human disturbance.
- There should always be a close cooperation with the local communities, land owners, other land-users and conservation interests. Ecological change (eg. fisheries, agricultural practice, habitat loss) should be monitored more carefully in relation to waterbird information in order to advise local managers.

FOLLOW-UP AND IMPLEMENTATION

Conclusions

- Worldwide, effective management of Anatidae populations is not adequate, as indicated by the large number of globally threatened taxa, declining populations and poor coordination of international conservation measures.
- The Global Action Plan for Anatidae, which will be published by the end of 1995, will provide an important framework for setting conservation priorities and actions on a global scale.
- For migratory species, it is essential to coordinate conservation measures at the level of biogeographic populations; actions by individual countries to manage migratory Anatidae are unlikely to be effective, if complementary actions are not taken elsewhere.
- Conservation actions in favour of the many globally threatened Anatidae cannot wait for agreements to become effective. Seventy percent of the globally threatened Anatidae taxa are non-migratory, and will therefore not be covered by the proposed Bonn Convention Agreements. Alternative measures must be taken for this group, and a first step should be the designation of more Ramsar sites for this group.
- The conference provided a good forum for the development coordination mechanisms and work programmes for the following IWRB Research Groups (RGs); Swan RG, Goose RG, Threatened Waterfowl RG and the Hunting RG. The future of these groups in coordinating the provision of high quality and objective information from research and monitoring programmes as the basis for conservation and management actions was clear.

Recommendations

- The Global Action Plan for Anatidae should be evaluated and reviewed on a regular basis, against measurable targets.
- Recommendations from this conference should be incorporated into the Action Plan and Conservation

Guidelines of the Agreements on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) under the Bonn Convention. Single species action plans should formally be linked to the AEWA.

- Countries are requested to promote the conclusion of the Waterbird Agreements currently being developed under the Bonn Convention.
- More Ramsar sites should be designated and properly protected and managed in order to complete the protection of site networks.
- Urgent actions are needed for the 50 globally threatened Anatidae taxa to promote their conservation. Highest priority should be given to prevent their extinction. Site-selection criteria should be reviewed in order to give better protection to the globally threatened Anatidae species. Parties to the Ramsar Convention should put high priority on the importance of protecting all wetlands of importance to globally threatened Anatidae. A shadow list of these sites should be prepared. Finally, more attention should be paid to non-migratory Anatidae species, especially those which are globally threatened.
- There should be more collaboration between scientists studying Anatidae in developed and developing countries, particularly for the globally threatened Anatidae. This will be promoted through the IWRB Threatened Waterfowl Research Group.

The above recommendations and conclusions were arrived at after five days of brain storming sessions, presentations and workshops. The final version will be included in the conference proceedings. The experts combined their french & english qualities (official languages) to put forth their arguments which were finely balanced.

The IWRB with the tremendous support from the French Ministry of Environment, the Office National de la Chasse (France) and Council of Europe had worked relentlessly to make this conference a grand success.

Many individuals burnt the midnight oil for months to make this happen. They include Mike Moser, Simon Nash, Janine van Vessem of IWRB, Paul Havet the french national delegate of IWRB and Marcel Birkan of Office National de la Chasse among others.

Thus the historic moment came to an end with the participants expressing their abiding gratitude to the organisers for their tireless efforts.

The Anatidae 2000 has been a launching pad to prevent the disaster scenario for many species of ducks, geese and swans. It is hoped that this legacy will be carried forward with the same zeal, to the 21st century and beyond.

Cover : **Spotbill duck** (*Anas poecilorhyncha*) is a non-migratory duck, confined to South, Southeast and East Asia. This large non-diving duck of scaly-patterned grey and brown plumage, prefers to remain in vegetation covered lakes and irrigation tanks. In the face of continuous loss of habitat and hunting pressure they are declining in numbers. The recently concluded **Anatidae 2000** conference has showed that 70% of globally threatened Anatidae taxa are non-migratory and they need more attention in relation to basic ecological research and conservation efforts.

Photo : S. Sridhar, ARPS

Editor : **ZAFAR FUTEHALLY**, No. 2205, Oakwood Apartments, Jakkasandra layout, Koramangala 3rd Block, 8th Main, Bangalore 560 034.

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